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CURING AND SMOKING TURKEYS

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Turkeys to be used for curing and smoking should be well fattened, equal to U. S. Grade A or better. They should be subjected to the usual overnight fasting period with access to water, then bled, brained, and carefully picked dry, or the feathers removed by the slack-scald method, about 30 to 40 seconds of agitation in water heated 126° to 128° F. Care should be taken not to break the skin in the dressing and handling process. Birds with badly torn skin should be rejected. Scalding at temperatures exceeding 128° F. is undesirable, because it damages or removes the outer skin surface. The removal of the tendons in the drumstick is suggested to provide for better penetration of the curing ingredients into the meat of that portion of the bird. Immediately after being picked the birds should be drawn as for roasting, removing all viscera, including lungs, kidneys, and the giblets, which are not utilized for curing and smoking. The interior should be completely freed of all removable tissues. The head, neck, shanks, and feet are then removed, leaving the body cavity open at both the front and rear ends with an unobstructed passageway between the two. The cleaned washed carcass is then hung up to drain and chill in cold air at a temperature of 30° to 40° F. If preferred, however, the bird may first be air-chilled in the New York dressed condition, then drawn, washed, and drained.

A suitable curing mixture consists of 6 pounds of salt, 3 pounds of brown sugar, and 2 ounces of saltpeter dissolved in 4½ gallons of water. This pickle contains approximately 13 percent salt and has a salinometer reading of about 70° at a temperature of 38° F. Experience has shown that about four times this indicated quantity of pickle, about 20 gallons, are required to cover 100 pounds of moderately large, drawn turkeys when packed carefully in a 50-gallon barrel. This much pickle can be made with 18 gallons of water, 24 pounds of salt, 12 pounds of brown sugar, and 8 ounces of saltpeter. The drawn turkeys should be packed carefully and close together in a suitable stainless steel or other noncorrosive container, such as a crock or a clean, well-soaked, odorless hardwood barrel. The turkeys should be weighted down with a clean board and bricks or stones so they will not float when the curing solution is added. Then the solution is poured over the turkeys until they are covered with a slight excess of liquid. It is important that the temperature of both the meat and the pickle be approximately 38° F. when the curing process is begun. It should be kept at that point throughout the curing period. At weekly intervals the turkeys should be either rearranged or removed from the

container and repacked in order to remix the pickle and to insure that solution will come in contact with all parts of the birds. Our experiments indicate that turkeys weighing from 14 to 20 pounds, after removal of the head, neck, shanks, feet, and viscera, should remain in the curing solution approximately 1-1/4 days for each pound. Stitch pumping the thicker meat parts would shorten this curing time.

The cured turkeys should be washed in warm water, hung up by the legs until the body cavities drain, and then smoked, using hardwood. During the smoking process the turkey should be hung by legs or wings in such a way as to provide for maximum exposure of skin as well as an opportunity for further drainage of curing fluid, especially from the body cavity. A smokehouse temperature of 135° to 140° F. for 16 hours is more effective in producing desirable color than are lower temperatures. However, a temperature of approximately 110° F. for 20 hours results in about 3 percent less weight loss in the smokehouse than the higher temperature for the shorter period of time. The smoked turkey produced according to these suggestions must be cooked before eating. These smoked turkeys can be kept several weeks without refrigeration. However, one must watch out for mold, especially in the body cavity. If wrapped in an air-tight film and frozen at 0° F. or lower, they can be held for several months. Cured frozen turkeys, however, should not be left in the freezer longer than about 3 months as salt accelerates undesirable changes.

According to experimental data the average large-type broad-breasted turkey, male or female, yields in freshly smoked (at 110° F.) weight (not including giblets and neck) about 62 percent of its live field weight, 70 percent of its New York dressed weight, 81 percent of its normal drawn weight (including giblets and neck used in figuring normal drawn weight) and 93 percent of its specially drawn (net carcass) weight. For small-type broad-breasted turkeys these figures are respectively 59, 61, 69, 81, and 93. Weight losses resulting from the special drawing in preparation for smoking are: Cleaned giblets 3.7 percent, loose abdominal fat 3 percent, and complete neck with skin 4.3 percent totaling about 11 percent of the New York dressed weight of 13 percent of the normal drawn weight. The specially drawn carcass gains about 5 percent in weight during brine curing but loses about 11.4 percent of its brine-cured weight during the smoking process at 110° F. for 20 hours resulting in the freshly smoked carcass weighing about 93 percent of its precured specially drawn net carcass weight. However, if smoked at 140° F. for 16 hours, the freshly smoked carcass weighs only 90 percent of its precooked specially drawn weight.

Malcolm et al. (1957) 1/ recommended a method similar to that just outlined but with a few modifications such as adding a little detergent to the 126° to 128° F. scalding water, using 3 instead of 2 ounces of saltpeter. They suggest that curing can be done after birds have been frozen and thawed. They also suggest that large turkeys weighing about 25 pounds eviscerated without neck or giblets remain in the curing

1/ See References at end of this paper.

solution 7 days, those about 21 pounds for 6 days, and smaller (14-pound) birds for 4 days. The cured turkeys are washed in three changes of warm water to remove the excess salt and are dried, requiring about 4 hours, before being smoked. Smoke-cooked turkeys that can be eaten without further heating, or, if desired, cooked before serving are smoked at 150° F. for about 18 hours. They have a salt content of 4 percent and a moisture content of 61 percent for light meat and 57 percent for dark meat. Turkeys that require cooking before eating are smoked at 115° to 125° F. for 48 hours. They have a salt content of 3.4 percent and the moisture content of the light meat is 59 percent of the dark meat is 66 percent. They can be roasted with or without stuffing.

Another method of producing a smoke-cooked turkey that is ready for eating without further cooking is recommended by the Extension Service, Texas A. and M. College, College Station, Texas, in Bulletin No. B-163 (1948). After selection, slaughter, and drawing as already described, proceed as follows:

"Step 1. - Chill bird to remove animal heat before pumping for curing.

"Step 2. - Pump the bird with brine mixture by injecting 10 percent of its weight. Stitch with a pressure pump using small or medium-sized needle. Pump bird to give uniform distribution of brine in all muscles. This will require on each side of the bird three stitches in breast, one in thigh, one in drumstick, one in wing, and one in back.

"The brine mixture for curing should give a reading of 45 to 50 percent saturation when measured with a sodium chloride salinometer and may consist of: 10 gallons of water; 9 pounds of salt; 1 pound prague powder; 1½ pounds sugar; 4 ounces ham spice emulsion.

"Step 3. - After bird has been pumped, cover it with the brine mixture. Be sure bird is covered with the solution. Keep it in this solution for three days.

"Step 4. - Remove bird after three days and drain thoroughly. Be sure none of the brine is left in the pockets of body cavities. Put it in stockinette and hang breast down.

"Step 5. - After it is about dry, put it in the smokehouse with the heat control set at 170° F. As soon as it is completely dry, smoke can be applied.

"Step 6. - Smoke to a light lustrous pecan nut brown. This usually takes 8 to 12 hours.

"Step 7. - When the desired color is obtained, increase the temperature in the smokehouse to 185° F. Cook the bird until the inside temperature at the thickest breast muscle area is 160° F. To determine this heat accurately it is necessary to insert a meat thermometer into the thickest part of the breast musculature. Approximately 20 percent shrinkage may be expected from this process.

"Step 8. - This process will cook the bird sufficiently to be eaten without additional cooking. This cooked product will not keep in ordinary refrigerator temperatures any longer than other meats such as precooked cured ham. If the birds are to be held longer than two weeks they should be frozen, packaged and held at 0° F. temperature."

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